

PATENT ABSTRACTS OF JAPAN

(11)Publication number:

2001-106594

(43) Date of publication of application: 17.04.2001

(51)Int.Cl.

C30B 29/06 C30B 25/02

(21)Application number : 11-286586

(71)Applicant: SUMITOMO METAL IND LTD

(22)Date of filing:

07.10.1999

(72)Inventor: ASAYAMA HIDEKAZU

UMENO SHIGERU HORAI MASATAKA

(54) METHOD FOR PRODUCING EPITAXIAL WAFER

(57)Abstract:

PROBLEM TO BE SOLVED: To produce an epitaxial wafer low in the epitaxial defect density. SOLUTION: (1) A method for producing an epitaxial wafer comprises using a silicion single crystal wafer which is doped with nitrogen and contains oxygen in a concentration of $\leq 9 \times 1017$ atom/cm3 in an OSF ring area. (2) A method for producing an epitaxial wafer comprises using a silicon single crystal wafer which is doped with nitrogen and is grown so that the inner diameter of an OSF ring area is $\geq 85\%$ of the diameter of the wafer. (3) A method for producing an epitaxial wafer comprises using a silicon single crystal wafer which is doped with nitrogen in a concentration of $\geq 1 \times 1012$ and $\leq 1 \times 1014$ atom/cm3 and is grown with a pulling-up velocity of ≥ 1.2 mm/min. (4) A method for producing an epitaxial wafer comprises growing an epitaxial layer after heat treating a silicon single crystal wafer at 1,200 to 1,300°C for at least 1 min, which wafer is grown while doping nitrogen in a concentration of $\geq 1 \times 1012$ and $\leq 1 \times 1014$ atom/cm3.

LEGAL STATUS

[Date of request for examination]

05.07.2000

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application

converted registration]

[Date of final disposal for application]

[Patent number]

3589119

[Date of registration]

27.08.2004

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]